

PERFORMANCE MEASURES For California Transportation System Users and Investors

CONFERENCE SUMMARY

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Sacramento, CA**

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PERFORMANCE MEASURES

For California Transportation System Users and Investors

**SUMMARY OF A TWO-DAY CONFERENCE
HELD IN SACRAMENTO ON OCTOBER 6-7, 1997**

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Introduction

The UCLA Extension Public Policy Program and the University of California Transportation Center, on behalf of the California Department of Transportation (Caltrans), Transportation System Information Program, convened a two day conference entitled *Performance Measures for California Transportation System Users and Investors*. The conference was held at the Sacramento Convention Center on October 6-7, 1997 and brought together nearly two hundred state, regional and local government representatives as well as private interest groups and researchers interested in the future of performance measures in California.

The purpose of this conference was to help Caltrans develop a set of intermodal system-level transportation performance indicators that will become a part of the ongoing planning, management, resource allocation, and policy-making process for transportation in California. The conference was one part of Caltrans' continuing process of identifying, developing and implementing performance measures.

The specific goals of the conference were as follows:

- To build a common frame of knowledge and language for addressing the process of discovering, developing and implementing a transportation performance measure system for California.
- To learn first hand about experience with the process of developing and implementing transportation performance measures at the national, state and regional levels from experts in the field.
- To understand how performance measures can improve policy formulation and decision making in the complex politically-charged world of transportation resource allocation.
- To help Caltrans develop a set of intermodal system-level transportation performance indicators that will become a part of the ongoing planning, management, and policy making process for transportation in California.

The first day of the conference aided in the building of a common language. The speakers included representatives from various levels of government that had implemented performance measures, as well as academics and experts in the field of performance measures. The second day began with a summary of the key points before dividing the participants into five workshops to facilitate discussions on specific issues related to performance measures. The conference concluded with a sharing of insights from the workshops and a panel discussion addressing how the information from the conference will fit into the transportation planning, policymaking, funding and management processes.

This report summarizes the important points that surfaced over the two-day conference. First, a brief background of the recent call for performance measures is presented, followed by a brief summary of general uses of performance measures. The next section summarizes the experienced designing and implementing performance measures shared by speakers from the federal, state and regional levels. The next two sections deal with major themes that emerged from the conference, followed by a brief look at the future of performance measures in California.

Background

In the keynote address of the two-day conference, Michael Meyer, Director of the School of Civil Engineering at the Georgia Institute of Technology, defined performance measures simply as indicators of achievement and added that they are not unique to transportation. Performance measures can be used in education to measure overall levels of learning or in medicine to assess the trends in public health. In transportation, performance measures can gauge, among many things, the level of accessibility, reliability or mobility provided by the system, as well as customer satisfaction, cost effectiveness or progress towards stated goals.

Several of the speakers noted that performance measures are not a new concept, but rather an old one that has gained considerable attention due to recent legislation. In 1991, The Intermodal Surface Transportation Efficiency Act (ISTEA) required that state departments of transportation and metropolitan planning organizations establish transportation management systems for pavement, bridges, safety, congestion, public transportation and intermodal transportation to track the performance of the transportation system and assist in decision making. Performance measures were an integral part of this ISTEA requirement. Although congress later made optional all transportation management systems except the Congestion Management Systems, many states and metropolitan areas had already begun work on devising and implementing performance measures and are continuing in this process.

The Governmental Performance and Results Act of 1993 was passed with the intention of tying the strategic goals of the federal agencies to outcome based performance measures. This act required the completion of a Department of Transportation Strategic Plan with performance measures used to gauge the progress towards achieving the stated goals.

While agencies in California originally embarked on the task of devising performance measures due to the requirements imposed in the 1991 ISTEA legislation, the California Transportation Plan of 1993 also recommends developing appropriate system performance objectives and measures with the goal of creating a “modern balance integrated multi-modal network.” The recent signing into law of Senate Bill 45 by Governor Wilson adds further impetus for developing performance measures in California by requiring, as part of new STIP guidelines, that “objective criteria for measuring system performance” be devised. SB45 essentially splits the transportation funding that flows into the state into a regional and state share. As the California Transportation Commission will no longer be responsible for selecting regional level projects, performance measures will help the Commission assess whether the regions are implementing their Regional Transportation Plan in a priority manner. The Commission will also use performance measures to aid in deciding which project to program at the state level.

General Uses of Performance Measures

Michael Meyer noted in his keynote address that performance measures have evolved over time from an allegiance to a set of product- or service- oriented standards to a current emphasis on providing customers outcome measures, a theme to be discussed in more detail later.

Performance measures are used for a variety of purposes in the field of transportation. Many of the conference speakers discussed these purposes and emphasized the importance of stating and understanding these purposes prior to devising the measures. The proposed use of the performance measures will drive the types of measures that are needed, and therefore the data that will be required to support the measures.

Several general uses of performance measures that were discussed at the conference are described below:

- *Program performance, evaluation and accountability:* One of the principle uses in transportation, performance measures evaluate and provide accountability for the large investments in transportation programs.
- *System performance:* Another typical use of performance measures is to monitor system performance over time and determine whether the goals of the system are being achieved and whether known problems are being addressed.
- *System planning:* Performance measures can pinpoint system weaknesses and guide future investments.
- *Budget prioritization:* In some states, such as Texas, performance measures are use as a determinant of fund allocations
- *Triggering device:* Performance measures can monitor performance and trigger more intense planning activities when problems arise.
- *Improving Customer Choice:* Performance measures can provide information to customers to better inform their transportation route, time and mode choice decisions.

Caltrans Progress on Performance Measurement

Since one main purpose of this conference was to provide input onto Caltrans' performance measure development process, it is appropriate to review Caltrans' progress to date. Caltrans undertook the task of developing performance measures as part of the 1993 California Transportation Plan, which called for performance assessment at the system level. Caltrans designed a three-part approach to performance measure development, including, in addition to convening this conference, the establishment of the Transportation Assessment Steering Committee (TASC) and the Policy Advisory Committee. The draft module report is scheduled to be completed by March 1998 and will include a list of performance indicators as well as an implementation plan. Caltrans intends to use the performance measures to inform investment analysis, planning, and policy development at the state level. Caltrans does not intend to use performance measures as the sole determinants of funding decisions, nor does it intend to impose new or increased burdens for data collection and reporting on regional or local agencies.

In creating performance measures, Caltrans will focus on the effectiveness, efficiency and externalities of the transportation system in a modally neutral, customer oriented, evolving process. TASC has drafted a list of nine proposed outcomes and is in the process of devising performance measures to match these outcomes. The nine outcomes include mobility/accessibility, reliability, cost-effectiveness, sustainability, environmental quality, safety and security, equity, customer satisfaction, and economic well being. One of the tasks of the workshop sessions was to aid in the development of specific outcome-oriented performance measures.

Experience with Performance Measures at the Federal, State, and Regional Levels.

A series of speakers related their experiences with performance measures at the federal, state and regional levels. While their insights and recommendations are integrated into the remainder of this report, the next section presents a short synopsis of the experiences and knowledge they shared at the conference.

Federal Level

As noted above, the Governmental Performance and Results Act of 1993 led to the use of performance measures at the U.S. Department of Transportation (DOT). Each of the modal agencies is now responsible for devising its own indicator-based strategic plan, which will then be integrated into the DOT strategic plan. Dane Ismart, Intermodal Engineer for the Federal Highway Administration (FHWA), described the process of designing and implementing performance measure intended to gauge progress towards FHWA's goals of mobility, safety, productivity, environmental enhancement and security. FHWA is emphasizing customer outreach and partnerships with lower level agencies, and is committed to ensuring that no additional data burdens will be required of the states or regions, despite the fact that many of the outputs and results that FHWA is monitoring are not within their jurisdiction.

State Level

At the state level, Texas uses performance measures for all budgeting and funding allocation purposes which has facilitated project cost monitoring and financial planning. Texas began using performance measures in 1973 but the results, although reported to the Legislative Budgeting board, were not really connected to the budget until 1993, when Texas replace their line item budget structure with a strategy-based budget. Texas currently has an overwhelming system of more than 10,000 performance measures distributed among the 274 statewide agencies. The legislature, concerned with inefficient and ineffective spending, switched to this type of budget to better understand their investments and the results of their investments at the agency level.

Also at the state level, Minnesota adopted a complex family of measures in 1993 to improve the efficiency of transportation investments and system performance. In addition to having a mix and balance of a critical few measures, the family of measures concept also calls for a hierarchy of measures with appropriate target outcomes at all levels of the organization. The Minnesota performance measures were designed for internal management, system monitoring, and evaluation of customer satisfaction, as well as justification of investment funding decisions.

Florida's DOT began using performance measures in 1990 when they experienced their largest funding increase and accountability in investment decisions became increasingly important. In 1995, Florida started working toward Performance Based Program Budgeting, using performance measures. Despite over 13 years of a strong policy framework for project prioritization; which, places safety first, preservation second and increasing capacity third in the state's objectives; the process of developing performance measures has been long and difficult, although critical, according to Robert Romig, Director of Office of Policy at the Florida Department of Transportation.

In addition, many other states, including Oregon, Virginia and North Carolina are using performance measures to benchmark progress towards goals, to allocate transportation investment money or in strategic planning.

Regional Level

At the regional level, the conference heard from the Capital District Transportation Committee of Albany, New York, the Southern California Association of Governments (SCAG) and the Metropolitan Transportation Commission (TC) in the Bay area.

The Capital District Transportation Committee, Albany's MPO, spent 3½ year developing a core and a supplemental set of performance measures. The core measures address higher values such as transportation service quality, quality of life, safety and cost. Supplemental measures are

considered intermediary, are more system oriented and include, for example, number of lane miles, pavement and bridge quality and the percentage of bus fleet that is ADA compliant. At the end of the 3½ year planning process, Albany programmed \$100 million through the MPO process and local elected officials allocated the money in a manner consistent with the plan to a wide array of projects that improved the balance of investment in the region.

According to Hasan Ikharta, SCAG used performance measures to devise the regional transportation plan that is pending approval by their board. The performance measures were developed over a period of two years and cover the nine categories of mobility, accessibility, air quality, cost-effectiveness, reliability, customer satisfaction, equity and livable communities. Ikharta laments the fact that the plan will probably be delayed, in large part due to reluctance on the part of elected officials to accept a plan that does not include their favorite projects. However, SCAG is proud of the fact that they used performance indicators to devise this plan and feel that they have started in the right direction for project programming in the region.

MTC, the Bay Area's MPO, has been using performance measures for a long time and currently uses them in the regional transportation plan, in air quality planning, in their pavement management system and in their approach to multi-modal investments. MTC devised a scoring system in which projects are awarded points for their expected performance in five weighted categories that reflect the policy objectives of the region's leadership. These categories include, in order of importance, rehabilitation and replacement, efficiency and effectiveness, external benefits, system expansion and cost effectiveness.

Basic Themes of the Conference

Throughout the conference, the speakers, panelists, moderators and workshop participants raised several important issues regarding the design and implementation of performance measures that formed a basis for the ensuing discussions. These issues, or themes, represented areas of general consensus among conference participants and attendants and are summarized below:

Outcome vs. Output Performance Measures

One of the major points mentioned repeatedly was that performance indicators should focus on measuring outcomes rather than outputs. Output measures relate to specific agency accomplishments such as the number of lane-miles built in one year, the level of service provided on the system or the amount of delay experienced on the system. Output measures attempt to gauge the efficiency of the system performance.

Outcome measures, on the other hand, track the extent to which the users of the system achieve their goals. Measures that track improvement in accessibility, mobility, reliability or even quality of life, are examples of outcome measures. In general outcome measures relate to system effectiveness and can also measure the externalities of the system.

Michael Meyer noted in his keynote address that while performance measures have traditionally been tied to system efficiency, a more global outlook on system performance would include indicators that measured system effectiveness and externalities, as well as system efficiency. He advocated, therefore, that a set of performance measure should include both outcome and output measures. In Texas for example, the legislature, while definitely interested in the outcome measures for allocating funds, still desires to review the traditional output measures.

Many of the speakers cautioned, however, that outcome measures are considerably more difficult and time consuming to devise than output measures. Billy Hamilton, Deputy Controller of Public Accounts from the state of Texas, noted that even after 6 to 7 years of working with performance measures, the state is still having trouble devising useful outcome measures. One reason for this difficulty is that Texas is attempting to use performance measures in a multidisciplinary context, and is comparing all investments from transportation to education. However, another reason for the difficulty is that causality is harder to establish, as many forces beyond the scope of transportation investments affect the desired outcomes. Michael Meyer also stressed the importance of establishing a strong causal link between performance measures and the desired outcomes. Jonette Kreideweis, of the Minnesota Department of Transportation, added that understanding transportation investments' contributions to outcomes is crucial, especially for the more ambitious outcomes like improved quality of life.

One of the workshops specifically recognized the difficulty of linking outcomes to performance measures and suggested that Caltrans make an effort to choose measures on the basis of outputs that are significant and indicative of likely outcomes.

Performance Measures should be Decision Tools not Decision Rules

Another point that emerged from the conference was that performance measures should act as decision tools and should not be used as decision rules. Allowing performance measures to inform transportation debates by providing useful, comprehensible, and relevant information was perceived as more politically acceptable than mandating investment decisions based on performance measures. Michael Meyer felt that using performance measures to drive the transportation resource allocation process would result in the manipulation and abuse of performance measures in the political arena.

Peter Hathaway of the California Transportation Commission noted that the commissioners truly want to allocate the available funding wisely. He cautioned that performance measures will not usurp the political process, but they can improve the debate and remove the weaker projects from consideration. The Commission is receptive to this role of performance measures as they welcome ways in which they can make better-informed decisions.

Martin Wachs, in summarizing the proceedings of his workshop¹, agreed that performance measures do not replace politics. Instead "performance measures can help to reassert a balance between political decision making and scientific and technical knowledge." He added that by acting as decision tools, performance measures can hold project sponsors accountable. Caltrans noted that it was their intention to use performance measures to better inform the debate, but not to drive the funding process. In this regard, it is useful to also recognize that performance measures need not reduce all potential investments to a number. Many important components of transportation performance cannot be quantified but qualitative indicators are still useful in decision making, as seen in the success of Albany's performance indicators that consider both the qualitative and quantitative benefits of investments in the project selection process.

Emphasize the Process, not the Product

Another significant conclusion of the conference is the recognition that the development and implementation of performance measures should focus on the process and not just the product. Experience from the other states and regions represented at the conference showed that developing successful performance measures requires a messy, painful, consensus building

¹ Workshop 3: Implementing Transportation System Performance Measurement in the Planning, Budgeting and Management Process

process that will later be deemed invaluable to the subsequent successful design and implementation of the measures.

Timothy Lomax took the position that a very important part of the process of developing a system of performance measures is identifying a mechanism to determine whether the performance measures are providing the expected useful information. Many speakers noted that even if the first round of performance measures prove to be unsuccessful either because they do not provide useful information, are not measurable or are not linked to desired outcomes, the agency should not be discouraged. Rusty Selix, Executive Director of the California Association of Councils of Government noted in the final panel that this conference and the continuing efforts towards devising performance measures in the coming year mark only the beginning of what should be a permanent performance measure process in California.

In summarizing the conclusions of his workshop, Martin Wachs noted that the process ought to be dynamic. Performance measures constructed in the past may no longer be relevant and ones that are being constructed now may not be relevant in ten years. Another important point that surfaced in this workshop was the recognition that in adopting performance measures, an agency is essentially stating a focus in policy making and decision making. Determining this focus is the essence of the process.

John Poorman, Staff Director of the Capital District Transportation Committee of Albany stressed that the 3 ½ year process of intellectual honesty, recognition of causality and clarification of values. He added that the discovery of values in the process also determined the product, a broad set of performance measures that address the higher values of access to choices, accessibility, congestion and flexibility as well as an array of external measures addressing land use, air quality and environmental and economic impact. Mr. Poorman added that if instead of investing time in the process, they had only focused on the issue of congestion they may have ended up with performance measures that dealt just with congestion. The process added to the richness of the product in Albany.

Several of the workshops recommended that Caltrans focus on improving the current process of performance measure development. While everyone agreed that facilitating this conference was an important step, many noted that Caltrans should strive to increase interaction with region and county level planners and transportation manager.

Political “Buy-in” Needed for Successful Performance Measures

Obtaining political “buy-in” is another important element of the process of designing and implementing successful performance measure. Many of the speakers and workshop participants cautioned that performance measures will potentially be disregarded or misused if the political powers and stakeholders are not involved in the discussions of designing the performance measures. Also, politicians and advocacy organizations are not only stakeholders, but important opinion leaders, and thus should be involved in the process of developing indicators.

In the workshop session moderated by Joanne Freilich², a representative from on California MPO noted that performance measures were developed to select projects based on four different scenarios, but because the process did not include obtaining political acceptance, the scenarios were all rejected by decision makers. The MPO is now attempting a more inclusive and participatory approach to performance measure development and hopes that gaining political acceptance in the process will improve the effectiveness of the measures.

² Workshop 1: Applications of Transportation Performance Measurement at the Regional and Local level in California

Hasan Ikharta, Senior Planner for SCAG, also stressed the need to work with local officials to obtain political buy-in if the performance measures are to be heeded by political leaders. He admitted that SCAG has not yet achieved this and, as a result, SCAG's Board was reluctant to approve their regional transportation plan when it did not include their favorite projects. However, Ikharta does feel that the performance measures process is benefiting from the time spent building some consensus. He also noted that as part of the process, agencies need to work with local officials in analyzing the costs and benefits of potential projects to determine whether enough funding exists to maintain and operate the capital projects that may now be financed federally. Ikharta was this as one opportunity to gain understanding of the importance of using performance measures and to increase consensus.

On a more positive note, John Poorman of Albany reported that their 3 ½ year long inclusive process of developing performance measures resulted in the local elected officials of the MPO programming every cent of the \$100 million of funding according to a regional transportation plan. He attributes the success to investing the time to acquire political buy-in of the desired outcomes and the performance indicators used to measure those outcomes.

Include the User and the Customer in the Process

Another essential element of performance measures process is including the user and the customer of the transportation system in the development of the measures. Andrew Poat, Chief Deputy Director of Caltrans, noted that changing the culture of Caltrans to focus on the agency's true customers – the system users – and not the vehicles they operate, will be an important outcome of the performance measures process.

David Jones, and several other speakers, noted that in order to be responsive to user needs, agencies will need to administer user surveys. He remarked that this detailed information was essential because users' needs and expectations of the transportation system may be surprising. He concluded that it is therefore essential to collect this detailed information in order to understand the potential user response to an investment in the transportation system. One example he cited was based on a survey of commuters in the Bay Area. Users with relatively short commutes, even on congested freeways, are generally satisfied with the transportation system because their commuter times are not highly variable. On the other hand, users with longer commutes along a series of congested freeways are generally rather dissatisfied because their commute times are highly volatile. These customers would even be willing to pay for a more reliable commute, and not even a necessarily shorter commute time.

User expectations vary with respect to mode, route and location, and Jones advocates a rich and sophisticated set of performance measures that will provide the detailed information desired by users. "Performance measures that don't account for variability in the performance of the system, and performance measures that don't account for the location of activities, the pattern of travel and the length of trips, really can't tell us much about the quality or reliability that the transportation system is actually delivering to the users". Timothy Lomax noted that there is an important link between the measurement of system performance, users' satisfaction with the performance of the system and policy planning and funding process. Improvements in infrastructure can only be attained if the funding priorities and planning decisions genuinely reflect measures of performance that are of interest to the system users.

While most of the speakers emphasized the need to involve the users, one of the workshops in particular noted that the transportation agencies must be proactive in encouraging user participation in the process. Linda How, this workshop moderator³, emphasized that Caltrans must seek out the users in a variety of ways. Public meetings alone were deemed inadequate. She advised Caltrans to approach the users rather than waiting for them to participate in public meeting. She also suggested that Caltrans attend stakeholder meeting, trade group meetings, association meeting, and PTA meetings and to use surveys, focus groups and the Internet. This workshop felt it essential to be proactively inclusive.

Issues that Merit Further Investigation

In addition to providing a frame of understanding of the basic issues regarding performance measures, the conference also addressed several more perplexing issues and questions. These were raised repeatedly in discussions over the two days and many of the participants provided significant insight into the nuances and complexities surrounding these issues, underlining the need for further attention to these areas.

Intergovernmental and Interregional Issues

One of the larger issues that surfaced at the conference was the feasibility of using a consistent set of performance measures among the various agencies and levels of government in California. Many of the speakers and participants advocated for a consistency rather than a conformity approach. Summarizing the proceedings of her workshop, Joanne Freilich suggested that desired outcomes and performance measures at the local level might be consistent but not necessarily the same as those at the state level. Standard measures were generally viewed as undesirable given the diversity of the state of California with large rural and urban areas and variations among metropolitan regions.

While most agreed that the measures should be consistent, the question of whether the consistency should be formalized was also raised. Martin Wachs, in summarizing the proceedings of his workshop, noted it was appropriate to have different performance measures at different levels of government and interaction among those levels, but it was perhaps not important to have a system of performance measures that are formally connected among different levels of government. He added that statewide indicators should be Caltrans' purview but there should not necessarily be standardization or formal connections at the regional and local levels.

Some concern was expressed by participants over the potential increase in data collection requirements at the local and regional levels necessary to facilitate performance measure development by state agencies. However, both Caltrans and FHWA stressed their desire to form partnerships with regional and local agencies to work on performance measures and emphasized a commitment not to impose further data requirements on local agencies. Several of the workshops suggested that perhaps Caltrans' role in facilitating consistency among agencies could be to give guidance and aid in data collection to be used at the state, regional and local levels. It was suggested by Kathryn Studwell, in summarizing the recommendations of her workshop⁴, that data be collected at the very local level and then aggregated to the regional and state levels, thereby minimizing duplicate efforts around the state. Each agency could then combine the data sets to best suit their performance measurement needs, ensuring consistency in the data among the various agencies and hopefully consistency in the performance measures.

³ Workshop 5: Devising Measures that Incorporate Needs of Diverse Interests and User Groups

⁴ Workshop 4: Developing a California Database in Support of a Performance Measurement Program

The conference revealed a tension between the need for both consistency and individuality in performance measure data collection and design. As noted above, many participants felt that interregional and intergovernmental consistency in performance measure implementation was desirable. However, participants also recognized that mandating standard measures might be inefficient or might unduly burden certain regions or agencies by imposing performance measures that are not universally applicable. Performance measures that are warranted in an urban setting, for example, may not be applicable in a more rural environment. Nevertheless, consistency was seen as desirable in order to facilitate data collection and provide a common framework for decision making across California. This tension between the merits of uniformity and the need for flexibility among regions and government levels is one that Caltrans should continue to explore as part of the ongoing performance measures process.

Intermodal Issues

Along with concerns regarding the implementation of a consistent set of performance measures among different levels of government, the issue of how and whether it is appropriate to devise set of performance measures that was meaningful across transportation modes was also raised. Generally, the conference participants agreed that it is certainly reasonable and important to think intermodally when devising performance measures. However, some participants were concerned that attempting to devise performance measures that were appropriate across all modes would exclude important mode specific indicators. Regional agencies also expressed concern that comparing intermodally was sometimes like comparing apples and oranges.

Conference participants expressed a desire to consider the transportation system as one integrated system comprised of complementary modes. Several speakers observed that one trip, whether involving people or freight, is often completed using several modes. However, Martin Wachs, again serving as workshop moderator noted that despite the fact that most trips are intermodal, the system is not managed intermodally. Given this situation, he noted that it might be appropriate for many indicators to be mode specific, and that perhaps this could be accomplished even within an overarching multimodal framework of performance measurement. Several of the speakers, including David Jones, noted that users have expressed different expectations of different modes and any set of performance measures should recognize this.

Achieving Simplicity and Comprehensiveness in Performance Measures

Many of the speakers stressed that one of the keys to performance measures was simplicity, both in the amount of data collected and in the number of performance measures devised and implemented. However, in many of the presentations and in the workshops, the notion that different measures will be required for the various levels of government, system components, modes and locations that comprise the transportation system was also generally agreed upon. As recognized by LeRoy Graymer in summarizing the proceedings of his workshop⁵, and apparent tradeoff exists between simplicity and manageability, and flexibility, adaptability and comprehensiveness.

Both Billy Hamilton of Texas and Jonette Kreideweis of Minnesota described systems of thousands of performance measures, although Hamilton admitted that the weight of their system makes it difficult to maintain. Workshop participants stressed that while these systems are admirably ambitious, they are perhaps excessive, and advised Caltrans to strive for a balance between simplicity and comprehensiveness in devising performance measures in California by avoiding large numbers of complex interrelated sets of measures.

⁵ Workshop 2: Developing Statewide Transportation System Performance Measurement

John Poorman of Albany also stressed the need to be comprehensive in order to produce useful performance measures. He suggested using the data and models that are currently available and building upon their success. Even if the data for a certain measure is not available, he suggested leaving the subject clearly articulated until the data does become available. Several of the workshops also suggested building on the successes that have already been achieved in California in the maintenance and operations areas as well as in the congestion management programs around the state. These areas have already adopted performance measures and one way to simplify the process in California is to build on these established measures. David Rose of the Dye Management Group suggested looking also to performance measures and data available in legislative reports, strategic plans, traffic monitoring and the statewide travel survey as a way of speeding and simplifying the process. Caltrans should carefully consider integrating these and other existing sources into their own performance measures process.

Data: Cautions and Prospects

Issues surrounding the validity, collection, timeliness and availability of data needed to construct meaningful performance measures entered many of the discussions throughout the conference. Suggestions were made to overcome these issues but a general feeling remained that there is a large task ahead with regard to data.

Michael Meyer and Jonette Kreideweis both cautioned that agencies should seriously consider the data implications of any proposed performance measure. Cost, availability and timeliness should be weighed against the importance of the specific measure in question. When a performance indicator is established, it should already be clear from what source the data will come and what restrictions, if any, the data will impose on the calculation of the desired indicator. One speaker noted that all data have errors but this should not be a prohibitive factor. However, these errors should be investigated and communicated to all users in order to prevent misuse.

The workshop specifically with addressing data issues suggested that a core set of data be compiled at the local level, with the help of Caltrans, that is translatable across jurisdictions and levels of government. The data collected should be available within a reasonable timeframe, consistent and useful for several purposes. The workshop even suggested using carrots and/or sticks to ensure timely, consistent data. Another valid suggestion is that data currently collected should be inventoried and analyzed for its applicability to the performance measures process. Data sets such as Caltrans' Intermodal Transportation System Data, HPMS, SWTR and Section 15 data were all suggested as possible existing data sources.

Despite these lengthy cautions and considerations, a few hopeful prospects for data were revealed. Philip Fulton of the Bureau of Transportation Statistics noted that the United States Bureau of Census is moving into a new method of data collection after the year 2000, which will replace the long form of the census with a measurement system based on a monthly American Community Survey. While the prospect of changing the data collected and the potential problems of consistency over time, Elizabeth Deakin noted that this new method provided great possibilities for better and richer data.

Another prospect for new data was suggested in one of the workshops. A representative of the trucking industry noted that perhaps some GPS data might be shared with Caltrans with the expectation that the information would be used to benefit movement of goods. Currently, valuable data is collected by private companies, but it is considered proprietary. Caltrans should pursue this potential partnership as well as convene other groups involved in goods movement with the hope that similar partnerships could be negotiated in the interest of improving system performance for all users.

What's Next?

On the first day of the conference, Howard Mischel, Senior Vice President and Director of Municipal Research at Massachusetts Financial Services discussed the applicability of performance measures to the private sector's investment decision process. As California and other states, in response to funding shortfalls, begin to consider private partnerships and alternative financing for needed transportation improvements, the opinion of private investors becomes an important consideration. According to Mr. Mischel, there are a wide variety of factors, which are part of the investment decision process for analysts and portfolio managers, performance indicators being only one. Performance indicators which give insight into long-term credit quality and viability of a transportation enterprise or infer something about management capabilities are of greatest value. In particular, this includes measures that indicate future demand/utilization for a facility or system, revenue/expense interrelationships and profitability, and the status of the capital planning/budget processes. Other indicators, such as those relating to safety issues and work quality are at a level of detail that investment professionals generally don't approach. Caltrans and the regional agencies should consider this emphasis in their performance indicator design process, as the future will likely hold increased private partnerships in transportation investment.

In the final panel of the conference, six stakeholders from various California transportation agencies and interest groups all raised important points with regard to the future of the design, development and implementation of performance measures in California. John Barna, Deputy Secretary of Transportation for the California Business, Transportation and Housing Agency, and Pete Hathaway of the California Transportation Commission both emphasized that SB45 brings new opportunities for using performance measures to evaluate potential projects in California at both the regional and state level. Rusty Selix of the California Association of Councils of Governments added that SB45 also creates the dynamics for making intermodal decisions and the need for measuring intermodal value. This flexibility underlines the need for performance measures to aid in this decision making and value measurement now more than ever. Mr. Selix also noted that SB45 emphasizes the need for accountability in project selection and Stan Randolph of the California Trucking Association suggested that performance measures could be developed into project selection criteria so that projects that improve the ability to move freight are duly credited.

Mr. Selix reiterated that Caltrans is really just embarking on the performance measures process, but that as California continues to face the pressures of rising population and limited land and monetary resources, the performance measures process will by necessity rise to the challenges. He added that the performance measurement process is the key to unlocking institutional and ignorance barriers and starting towards better transportation investment decisions in California. Kenneth Ryan of the Sierra Club added that Caltrans has the people, the process, the connections and the brainpower to unite all of the players and create these effective new decision making tools. However, despite their abundant resources, he predicted that the process will not be easy for Caltrans. Andrew Poat emphasized that a shift in the culture of Caltrans to focus on the system users, rather than the vehicles they operate, will be a significant and necessary outcome of the process.

Despite much concern among participating representatives of local and regional agencies that their priorities might be overlooked and that performance measurement might burden them with new requirements, there was a consensus that Caltrans faces quite a challenge in the coming

years. The final panel, though comprised of various interests, generally agreed that performance measures can improve transportation decision making in California, provided that the process includes the stakeholders and the system users. Most conference participants were confident that an inclusive and patient process, of which this conference is only a part, will allow Catrans to develop a useful, informative, customer oriented set of performance indicators for California.

Suggestions for Further Reading

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